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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/601,818      | 06/23/2003  | Dieter Kress         | P/2107-239          | 9834             |

2352 7590 11/06/2006

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| EXAMINER |
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TALBOT, MICHAEL

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

3722

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/601,818

Applicant(s)

KRESS ET AL.

Examiner

Michael W. Talbot

Art Unit

3722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-12, 16-18 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-12, 16-18 and 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 August 2006 has been entered.

### *Claim Objections*

2. Claims 2, 20 and 23 are objected to because of the following informalities:

Refer to claim 2, line 18, the word "shaped" should be inserted within newly added phrase "wherein the tool and cutter tip are both to be operable for metal cutting" so as to read -- wherein the tool and cutter tip are both shaped to be operable for metal cutting--.

Refer to claim 20, line 19, the word "shaped" should be inserted within newly added phrase "wherein the tool and cutter tip are both to be operable for metal cutting" so as to read -- wherein the tool and cutter tip are both shaped to be operable for metal cutting--.

Refer to claim 23, line 17, the word "shaped" should be inserted within newly added phrase "wherein the tool and cutter tip are both to be operable for metal cutting" so as to read -- wherein the tool and cutter tip are both shaped to be operable for metal cutting--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2,3 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889. Kress et al. '483 shows in Figures 3,5 and 6 a tool for metal cutting a surface in an opening (19) comprising a hexagonal, indexable cutter tip (1) having a front/top side (3) and two support regions/surfaces (31) for supporting the cutter tip being oriented with respect to each other at an angle (Fig. 6) such that a line bisecting the angle runs essentially perpendicular to an active cutting edge (outer edge where arrow of 1 is pointing). Kress et al. '483 shows an angle between each side (7) of the cutter tip and an adjacent side (7) being substantially the same (Fig. 6) for each side of the cutter tip (col. 3, lines 13-16). Kress et al. '483 shows the cutter tip being turnable six times to make six cutting edges (col. 3, lines 13-16). Kress et al. '483 shows a clamping claw (29) which holds the cutter tip to the supporting regions (col. 5, lines 43-54) wherein the clamping claw comprises a clamping lip (33) coming to rest on the front/top side of the cutter tip. Kress et al. '483 shows the tool and cutter tip are both shaped to be operable for metal cutting machining of valve seats in cylinder heads of internal combustion engines.

Kress et al. '483 lacks the cutter tip having at least one V-shaped cross-section clamping notch formed on the front/top side. Kress et al. '889 shows in Figure 1 a hexagonal, indexable cutter tip (1) having a front/top side (3) formed with V-shaped cross-section holding slots (5) for engagement with an appropriate holding clamp (col. 2, lines 35-44). In view of this teaching of Kress et al. '889, it would have been obvious to one of ordinary skill in the art to modify the cutter insert of Kress et al. '483 to include V-shaped cross-section holding slots as taught by Kress et al. '889 to enhance the clamping force by improving the contact area between the clamping arm and the cutter insert, thus firmly anchoring the cutter tip onto the body of the cutting tool.

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Regarding claim 2, the phrase "where in the tool and cutter tip are both shaped to be operable for metal cutting machining of valve seats in cylinder heads of internal combustion engines" does not further limit the claim and is merely a functional/intended use statement not defining any specific structure. It should be noted that it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. The only requirement is that the prior art reference be capable of said intended use. See MPEP 2114. In this case, Kress et al. '483 is fully capable of metal cutting machining of valve seats in cylinder heads of internal combustion engines regardless as to how well it performs.

5. Claims 4,5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889, further in view of Breuning '842. Kress et al. '483 in view of Kress et al. '889 lack the presence of rectangular cross-section shaped inserts positioned in the main body for defining the respective supporting regions, wherein the rectangular cross-section shaped inserts are comprised of a material of a greater hardness than the hardness of the main body.

Breuning '842 shows a tool having a main body (20) including respective rectangular cross-section shaped inserts (8) for defining the supporting regions being made of a material which is harder than the main body and being essentially rectangular in cross section (col. 2, lines 15-23). In view of this teaching of Breuning '842, it would have been obvious to one of ordinary skill in the art to modify the tool main body of Kress et al. '483 in view of Kress et al. '889 to include a rectangular cross-section shaped insert as taught by Breuning '842 to reduce the likelihood of the tool holder deforming as a result of heat generation and cutting pressure,

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through the increased heat absorption of the intermediate insert layer of a harder material than the tool body.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842, further in view of Erickson '650. Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842 lack the insert members used to define the supporting regions being pin-shaped elements.

Erickson '650 shows in Figures 1-3 and 8 a cutter tip (12) having inserts (14,24) that define the supporting regions of the cutter tip. In view of this teaching of Erickson '650, it would have been obvious to one of ordinary skill in the art to modify the insert member that defines the supporting regions of Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842 with an alternate pin shaped insert supporting member as taught by Erickson '650 to provide an enhance clamping structure for the cutter tip (col. 1, lines 45-57) thus improving cutting efficiency and limiting wear.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842, further in view of Satran et al. '724. Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842 lack the inserts being made of at least one of the group consisting of metal carbide, ceramic and cubical boron nitride (CBN).

Satran et al. '724 shows in Figure 1 an insert (11) being made from metal carbide (col. 3, lines 47-51). In view of this teaching of Satran et al. '724, it would have been obvious to one of ordinary skill in the art to replace the insert of Kress et al. '483 in view of Kress et al. '889 in view of Breuning '842 with a metal carbide insert as taught by Satran et al. '724 to provide a much harder cutting tip requiring minimal manufacturing resulting in a member that can be mass produced at a lower cost than conventional inserts (col. 2, lines 45-58).

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8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889, further in view of Breuning '842. Kress et al. '483 in view of Kress et al. '889 lack the presence of the main body defining clearances around the cutter tip at least in regions of the tool at the supporting regions.

Breuning '842 shows a tool having a main body (20) defining clearances (26) around the cutter tip at least in regions of the tool at the supporting regions. In view of this teaching of Satran et al. '724, it would have been obvious to one of ordinary skill in the art to modify the tool main body insert of Kress et al. '483 in view of Kress et al. '889 to include clearances around the cutting tip as taught by Breuning '842 to provide effective relief surfaces, thus reducing the likelihood of fracture to the tool main body at the site of stress concentration due to heat generation and cutting pressure.

9. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889, further in view of Royal et al. '198. Kress et al. '483 in view of Kress et al. '889 lacks the clamping arm having a lubricant/coolant system.

Royal et al. '198 shows in Figures 3-5 a cutter tip (34) being secured to the tool by a clamping block (38) constructed with a lubricant/coolant system (Fig. 5) having an elongated coolant outlet (72,74,76) to disperse lubricant/coolant fluid toward the cutting edge (36). In view of this teaching of Royal et al. '198, it would have been obvious to one of ordinary skill in the art to modify the clamping arm of the cutter tip of Kress et al. '483 in view of Kress et al. '889 with the clamping block of Royal et al. '198 to provide a dual functional clamping element that will not only secure the clamping insert in place but also enhance chip removal by breaking the chip material into smaller pieces, via fluid flow, thus improving cutting efficiency and limiting wear.

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10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889, further in view of Link et al. '155. Kress et al. '483 in view of Kress et al. '889 lacks the cutter tip being made of cubical boron nitride (CBN).

Link et al. '155 shows in Figures 1 and 2 a tool (10) having indexable CBN (col. 6, line 64 through col. 7, line 3) cutting tips (15,16,17). In view of this teaching of Link et al. '155, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Kress et al. '483 in view of Kress et al. '889 with a cubical boron nitride (CBN) cutter tip as taught by Link et al. '155 to provide a more durable, more wear resistance, improved chip control cutting tip that will extend the service life of the cutter tip.

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kress et al. '483 in view of Kress et al. '889, further in view of Hellstrom et al. '081. Kress et al. '483 in view of Kress et al. '889 lacks the cutter tip having a flank that includes regions of different angles of inclination.

Hellstrom et al. '081 shows in Figures 6-8 a cutter tip (15') having a flank surface (22',50,23'). In view of this teaching of Hellstrom et al. '081, it would have been obvious to one of ordinary skill in the art to replace the cutter tip of Kress et al. '483 in view of Kress et al. '889 with a different shaped cutter tip having flank surfaces as taught by Hellstrom et al. '081 to increase the versatility of the cutting insert due to its compatibility with a larger number of tool seats and to limit wear of the non-active sides.

### ***Response to Arguments***

12. Applicant's arguments filed 18 August 2006 with respect to claims 2-12,16-18 and 20-25 have been considered but are moot in view of the new ground(s) of rejection as described above with respect to Kress et al. '483 in view of Kress et al. '889.



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**Conclusion**

13. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mrs. Monica S. Carter, may be reached at 571-272-4475.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MWT  
Examiner  
30 October 2006



MONICA CARTER  
SUPERVISORY PATENT EXAMINER



New Sheet  
Serial No.: 10/601,818

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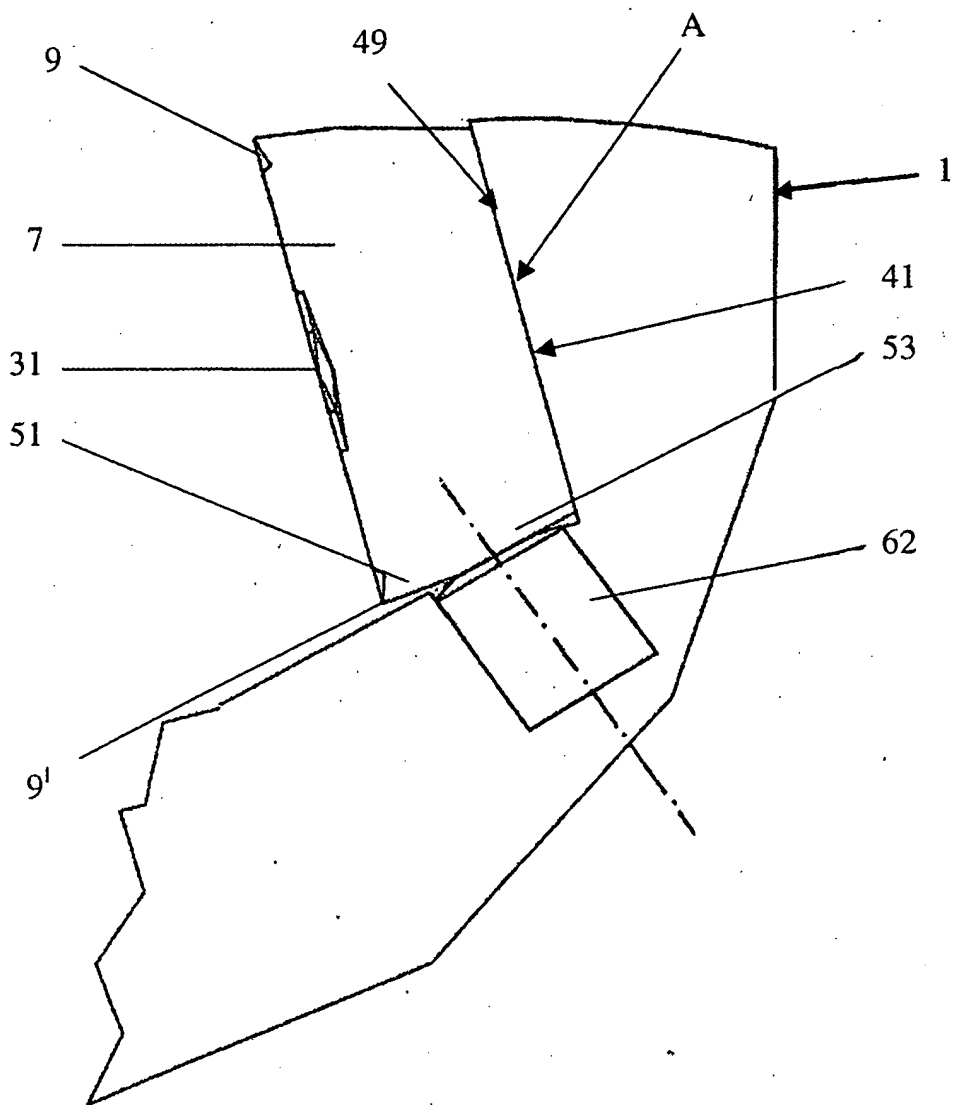


Fig. 6A